

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in this application.

Listing of Claims:

1 – 34. (Canceled)

35. (Currently Amended) A device used for interleaving in turbo codes, comprising:

means for grouping a source sequence of symbols into a sequence of M sub-blocks;

means for sequentially performing intra-block permutations on the a sequence of M sub-blocks in a block-by-block manner symbols to produce an intra-block permute sequence by re-ordering the symbols within each sub-block of the sequence of M sub-blocks;

means for grouping the intra-block permute sequence into an intra-permuted sequence of sub-blocks; and

means for performing inter-block permutations, once the intra-block permutations has initiated, on the intra-block permuted sequence of sub-blocks by re-ordering the symbols in each block of the intra-permuted sequence of sub-blocks across a number of sub-blocks to form an interleaved output sequence of symbols, wherein the symbols of a K^{th} sub-block in the intra-permuted sequence of sub-blocks are re-ordered across E_K sub-blocks prior to the K^{th} sub-block and L_K sub-blocks after the K^{th} sub-block, wherein E_K is an integer of $\min(D, K-1)$ and L_K is an integer of $\min(D, M-K)$, and D is half of a permutation spread of the inter-block permutation in the sub-blocks.

36. (Original) The device of claim 35, wherein the means for performing intra-block permutations re-orders symbols within blocks of the sequence of symbols of a first length.

37. (Original) The device of claim 35, wherein the means for performing inter-block permutations re-order symbols within blocks of intra-block permuted sequence of symbols of a second length.

38. (Currently Amended) The A device of claim 35, further comprising a second device used for de-interleaving in turbo codes, said second device comprising:

means for performing permutations on a sequence of symbols to reverse intra-block permutations and produce a reverse intra-permuted sequence; and

means for performing permutations on the reverse intra-permuted sequence to reverse inter-block permutation.

39. (Currently Amended) A method for interleaving in turbo codes, comprising:

grouping a source sequence of symbols into a sequence of M sub-blocks;

performing sequentially intra-block permutations on the a-sequence of M sub-blocks in a block-by-block manner symbols to produce an intra-block permuted sequence by re-ordering the symbols within each sub-block of the sequence of M sub-blocks;

grouping the intra-block permute sequence into an intra-permuted sequence of sub-blocks; and

performing inter-block permutations, once the intra-block permutations has initiated, on the intra-block permuted sequence of sub-blocks by re-ordering the symbols in each block of the intra-permuted sequence of sub-blocks across a number of sub-blocks to form an interleaved output sequence of symbols-, wherein the symbols of a K^{th} sub-block in the intra-permuted sequence of sub-blocks are re-ordered across E_K sub-blocks prior to the K^{th} sub-block and L_K sub-blocks after the K^{th} sub-block, wherein E_K is an integer of $\min(D, K-1)$ and L_K is an integer of $\min(D, M-K)$, and D is half of a permutation spread of the inter-block permutation in the sub-blocks.

40. (Original) The method of claim 39, wherein performing intra-block permutations re-orders symbols within blocks of the sequence of symbols of a first length.

41. (Original) The method of claim 39, wherein performing inter-block permutations re-order symbols within blocks of the intra-block permuted sequence of symbols of a second length.

42. (Currently Amended) The method of claim 39, wherein the intra-block and inter-block permutations are performed simultaneously after being initiated.

43. (Currently Amended) The A method of claim 39 further comprising for de-interleaving in turbo codes, the de-interleaving comprising:

performing permutations on a sequence of symbols to reverse intra-block and inter-block permutations.

44. (Currently Amended) The A method of claim 39 further comprising ~~for~~ de-interleaving in turbo codes, the de-interleaving comprising:

performing permutations to reverse intra-block and inter-block permutations simultaneously.

45. (New) The device of claim 35, wherein the means for performing inter-block permutations on the intra-block permuted sequence of sub-blocks further permute the sub-blocks to from previous E_k sub-blocks to last L_k sub-blocks.

46. (New) The method of claim 39, wherein the performing inter-block permutations on the intra-block permuted sequence of sub-blocks further permute the sub-blocks to from previous E_k sub-blocks to last L_k sub-blocks.